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cells, but with their decomposition products and the exchange between the cell and its surroundings," and that from our knowledge of these "we may speculate on the composition of the cell and the changes that go on in it during functional activity," represents two lines along which productive work is being done and will continue to be done, he is leaving in the background a third line which has also proved helpful and promises still more for the future.

We might wish that the author had given more recognition to the fact that many plant processes are conditioned by the permeability or impermeability of non-living plant membranes. These, however, are very minor criticisms on a book which commends itself strongly by its many excellent features. Among the important topics discussed in the introduction are viscosity as a factor in diffusion, surface phenomena, and the relation of semipermeability to electric phenomena.

His discussion of the plasma membrane (p. 94) as a separate phase which may change with the physiological condition of the cell, and of the protoplasm as sometimes consisting of as many as four phases, in all of which partition solubility must be considered, as well as the molecular condition of each solute in each phase and in the bathing medium, leads him to the conclusion that "all of these factors make the subject of cell permeability a very complex one, no general rules without exception having been found. All we can do at present is to collect data on the permeability of cells to various substances." It is to be hoped that this will commend itself so strongly to biologists that we shall have a larger output of data and a smaller output of theories.

The following shortened chapter headings will suggest the general scope of the book: electrolytic dissociation; osmotic pressure; hydrogen and hydroxyl ion concentration; surface tension and absorption; electrolytes, non-electrolytes, and colloids; enzyme action; permeability and its changes; negative osmosis; anesthesia and narcosis; amoeboid motion, cell division and parthenogenesis; muscular contraction; blood and other cell media.

The "chemical summary" in the appendix will be very useful. The literature list includes over 1500 papers arranged alphabetically according to authors. References in the text to this list facilitate more detailed study of any desired topic. Instead of the conventional index to the text, there is an index to this literature list.—GEORGE B. RIGG.

NOTES FOR STUDENTS

Taxonomic notes.—BLAKE² has described a new *Rudbeckia* (*R. Deamii*) from Indiana, closely allied to *R. speciosa*.

COKER³ has published a detailed and handsomely illustrated monograph of the *Amanita* group as represented in the eastern part of the United States.

² BLAKE, S. F., A new *Rudbeckia* from Indiana. *Rhodora* 19:113-115. 1917.

³ COKER, W. C., The *Amanitas* of the eastern United States. *Jour. Elisha Mitchell Sci. Soc.* 33:1-88. *pls. 69.* 1917.

He recognizes 7 species in *Amanitopsis*, although he regards the genus as "artificial and without systematic significance," separated from *Amanita* by the absence of a single character. In *Amanita*, 27 species are described, with full discussion and citation of stations; among them there are 2 new species and 2 new varieties. The numerous plates are unusually good reproductions of fine photographs.

GARDNER,⁴ in a first paper on new marine algae from the Pacific Coast, describes, in collaboration with SETCHELL, 9 new species in as many genera. *Coriophyllum* and *Cumagloia* are described as new genera.

KAUFFMAN⁵ has described a new species in *Russula* (*R. ochroleuroides*) and in *Stropharia* (*S. caesiospora*) from Tennessee. They are described in connection with a list of fungi collected in Kentucky and Tennessee during September 1916.

MACBRIDE,⁶ in a revision of the North American species of *Amsinckia*, recognizes 23 species, 6 of which are described as new. In further notes on the Boraginaceae, he publishes new species in *Cordia*, *Onosmodium*, and *Lithospermum*, a new variety of *Macromeria exserta*, and new combinations in several genera. In notes on the Hydrophyllaceae, the same author describes a new genus (*Turricula*) founded on *Nama Parryi* Gray, also new species in *Phacelia* (6) and *Miltizia*, 9 new varieties, and numerous new combinations. A new species is also published in *Petalostemum*, and *Gilia virgata* and its allies (a group of 5 species) are discussed. In cooperation with PAYSON, the same author describes new species in *Arabis*, *Dodecatheon*, *Mertensia*, *Veronica*, *Castilleja* (2), and *Hieracium*, all from Idaho; and also revises series MULTIFIDI of *Erigeron*, recognizing 3 species and 7 varieties, 3 of the varieties being new.

STANLEY,⁷ in a monograph of the Mexican and Central American forms of *Ficus*, recognizes 41 species, 17 of which are described as new.

WERNHAM,⁸ in continuing his studies of the Rubiaceae of the American tropics, has described *Neobertia* and *Blandibractea* as new genera. He also presents the genus *Sipanea*, recognizing 10 species and describing 6 of them as new; also 3 new species of *Cephaelanthus* are described.—J. M. C.

⁴ GARDNER, N. L., New Pacific Coast marine algae. I. Univ. Cal. Publ. Bot. 6:377-416. pls. 31-35. 1917.

⁵ KAUFFMAN, C. H., Tennessee and Kentucky fungi. Mycologia 9:159-166. 1917.

⁶ MACBRIDE, J. FRANCIS, Contrib. Gray Herb. New Series, no. 49. pp. 79. 1917.

⁷ STANLEY, PAUL C., The Mexican and Central American species of *Ficus*. Contrib. U.S. Nat. Herb. 20:1-35. 1917.

⁸ WERNHAM, H. F., Tropical American Rubiaceae. VIII. Jour. Botany 55:169-177. 1917.